



City of Burlington
Department of Public Works

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Martha Q. Keenan
Capital Improvement Program Manager

Fletcher Free Library Chiller Replacement

Posting Date: June 6, 2014

Walk-Through: Wednesday, June 11th at 8:30 AM at the library entrance
235 College Street, Burlington VT

Pricing due: Tuesday, June 17th at 4PM

Contact: Martha Q Keenan
Capital Improvement Program Manager
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Burlington Public Works Department
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The City of Burlington is replacing the chiller at Fletcher Free Library. Specifications and recommendations are attached.

Awards will be evaluated based on:

1. Timeliness of replacement
2. Ability to provide short term cooling and its associated cost

Memorandum

Date: June 5, 2014

To: Martha Keenan, City Of Burlington

From: Ben Fowler, Cx Associates

Re: FFL Replacement Chiller Specification

The following are Cx Associates' recommended specifications for the replacement chiller at Fletcher Free Library:

Mechanical

Capacity:	90-100 Tons Total Capacity
Entering Chilled Water Temperature:	54° F
Leaving Chilled Water Temperature:	44° F
Chilled Water Flow:	216 GPM (2.4 GPM per ton)
Chilled Water Fluid:	Fresh Water
Evaporator Fouling Factor:	0.0001
Entering Condenser Water Temperature:	85° F
Leaving Condenser Water Temperature:	Per Chiller Manufacturer
Condenser Water Flow:	225 GPM (2.5 GPM per ton)
Condenser Water Fluid:	Fresh Water
Condenser Fouling Factor:	0.00025

Minimum Required Efficiency based on 2011 VT Commercial Building Energy Standards:

VT CBES 2011 Water Cooled Chillers Minimum Efficiency	Path A		Path B	
	Full Load	IPLV	Full Load	IPLV
Positive Displacement ¹	0.775 kW/Ton	0.615 kW/Ton	0.790 kW/Ton	0.586 kW/Ton
Centrifugal	0.634 kW/Ton	0.596 kW/Ton	0.639 kW/Ton	0.450 kW/Ton

1. Note that scroll and screw type compressors are both positive displacement.

Electrical

Voltage:	208/230
Phase/Frequency:	3ph/60hz

Controls

- Fully BACnet integratable.
- At least one hardwired AI and one hardwired DI separate from BACnet. Currently the control system enables and disables the chiller. Initially, unit may be wired-up with existing controls, with the option to be enabled/disabled with BACnet integration the following year. AI to be included to allow for remote setpoint adjustment.

Recommended Equipment Type

- We recommend considering a scroll-type chiller. Scroll-type chillers are higher efficiency, and can contain multiple compressors which can result in increased reliability. They are also quieter than screw chillers.
- Burlington Electric department can provide rebates for better-than-code efficiency units. We recommend requiring the following two bid alternates:
 1. An alternate with 10% better than above stated code minimum efficiency.
 2. An alternate for best available efficiency option.

Currently Installed Equipment

Carrier Model: 30HXC096RZ-540

Serial Number: 2102Q01581

Acceptable Manufacturers

- Carrier
- McQuay
- Trane
- York

Notes:

- 1) Access to chiller room is constrained by standard width doors. Note that the above listed Carrier chiller model was able to pass into the installed location, though with little additional clearance.
- 2) Cx Associates only provides this rough spec with understanding that we will be able to review contractor proposals for completeness prior to a bid award.
- 3) Contractor must visit site and field-verify physical fit.